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# South Dakota Timber Industry—An Assessment of Timber Product Output and Use, 2004

Ronald J. Piva, Gregory J. Josten, and Richard D. Mayko

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## FOREWORD

In this bulletin we discuss recent South Dakota forest industry trends and report the results of a detailed study of the forest industry, industrial roundwood production, and associated primary mill wood and bark residue in South Dakota in 2004. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resources management, and forest industry development. Likewise, researchers need current forest industry and industrial roundwood information for planning projects.

Special thanks are given to the primary wood-using firms for supplying information for this study and to the South Dakota Department of Agriculture, Division of Resource Conservation and Forestry, for canvassing the respondents. Their cooperation is greatly appreciated.

All board foot data in this report have been converted to International 1/4-inch scale by applying a multiplier of 1.08 to all saw log volumes reported in Scribner scale by sawmills, a multiplier of 1.38 to all saw log volume reported in Doyle scale by sawmills, and a multiplier of 0.158 to all saw log volume reported in cubic feet.

Tables in the appendix relating to sawtimber volume are presented in both International 1/4-inch rule and cunits (100 cubic feet). The International 1/4-inch rule is the USDA Forest Service standard, while the cunit is a common measure used in South Dakota by forest industries and land management agencies. Because these results are used nationally and consistent comparisons are crucial, the International 1/4-inch rule is used as the unit of measure for sawtimber volume unless cunits are noted in the text. The authors have made an effort to include cunit tables to improve the utility of the inventory results for regional and local users of these results.

Another common unit of measure for sawtimber in South Dakota is the Scribner Decimal C log scale. The Scribner Decimal C scale is different from the Scribner scale in that it rounds the volume to the nearest 10 board feet. For example, 392 on the Scribner scale is equivalent to 390 board feet on the Scribner Decimal C scale. Because sawtimber volumes in this report are reported in thousand board feet International 1/4-inch rule, it is recommended that volumes be converted to Scribner scale and not rounded to the nearest 10. To convert from International 1/4-inch rule to Scribner scale, multiply the volume by 0.724638.

The last published report from a detailed study of all industrial roundwood output in South Dakota was for 1999. Most comparisons in this report are with the 1999 study results. Rows and columns may not sum due to rounding, but data in each table cell are accurately displayed.

When new surveys are completed, errors and omissions from previous surveys are corrected. As a result of our ongoing efforts to improve the survey's efficiency and reliability, changes may have been made to the previous survey's data. All comparisons and analysis in this report are based on the reprocessed data from earlier surveys, which may not match earlier published data.

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# South Dakota Timber Industry—An Assessment of Timber Product Output and Use, 2004

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## HIGHLIGHTS

### PRIMARY TIMBER INDUSTRY—INDUSTRIAL ROUNDWOOD

- In 2004, South Dakota's primary wood-using industry was comprised of 17 sawmills, 3 post mills, 3 cabin log mills, 1 excelsior/shavings mill, and 1 particleboard mill (table 1).

- Seventeen of the State's primary wood-using mills were located in the Western Forest Survey Unit, which contained the majority of South Dakota's forest resources (fig. 1).

- In the Western Forest Survey Unit, two sawmills, two cabin log mills, and one post mill opened between 1999 and 2004. In the Eastern Unit, three sawmills and one excelsior/shavings mill opened, and one sawmill and one cabin log mill closed between surveys.

**About the Authors:**

**Ronald J. Piva**, Forester, received a B.S. in forest management from the University of Missouri-Columbia. He joined the Forest Service in 1987 and has been working with the North Central Station's Forest Inventory and Analysis Unit since.

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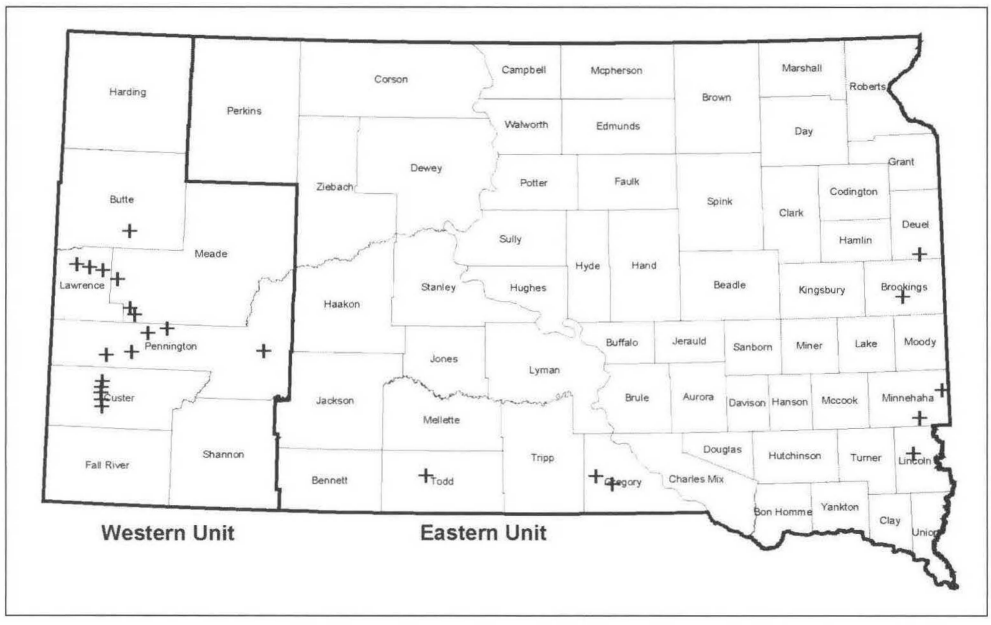


Figure 1.—*Forest Survey Units and location of wood-using mills in South Dakota, 2004.*

- Less than 1 percent of the roundwood processed in 2004 by the primary wood-using mills in the Western Unit was from hardwood species, while almost 60 percent of the roundwood processed by the Eastern Unit's primary wood-using mills was from hardwood species.

- Industrial roundwood receipts in South Dakota increased from 23 million cubic feet in 1999 to 25 million cubic feet in 2004, an increase of almost 10 percent (table 2).

- Softwoods, mainly ponderosa pine, made up 99 percent of the roundwood processed by the State's primary wood-using industry in 2004.

- In 2004, almost 22 million cubic feet of industrial roundwood were harvested from South Dakota's forests (table 3)—an increase of 2 percent from 1999. Industrial roundwood production of softwoods increased by 3 percent while hardwood production decreased by 60 percent.

- Softwood species accounted for 99 percent of the industrial roundwood produced in 2004 (fig. 2).

- Ponderosa pine, at 20.4 million cubic feet, was the major species harvested in the State in 2004. Spruce was the second most harvested species, at 966 thousand cubic feet. Only 127 thousand cubic feet of hardwoods were harvested from South Dakota's forest land in 2004.

- In 2004, saw logs made up 93 percent of the total industrial roundwood produced in South Dakota (fig. 3).

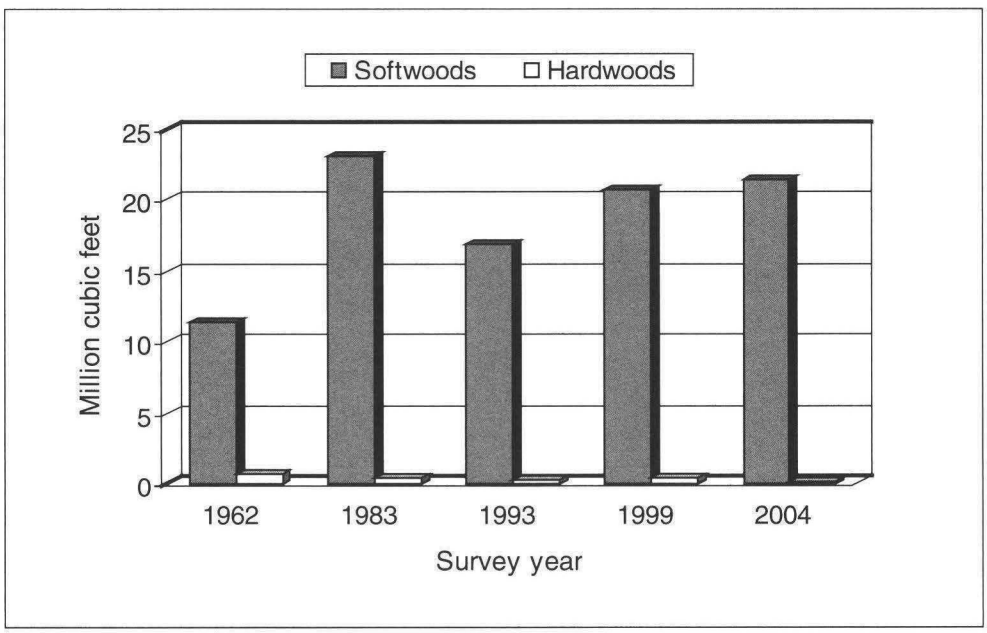


Figure 2.—*Industrial roundwood production by species group, South Dakota, 1962-2004.*

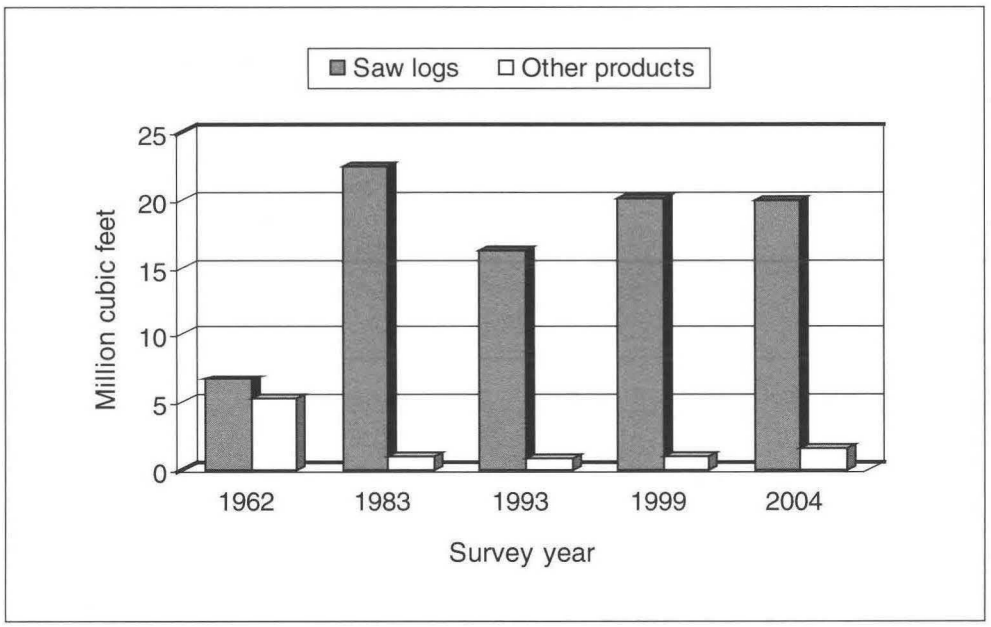


Figure 3.—*Industrial roundwood production by product, South Dakota, 1962-2004.*

- Ninety-nine percent of the State's industrial roundwood production came from the Western Forest Survey Unit.

## SAW LOGS

- South Dakota's saw log receipts increased by more than 6 percent in 2004, from 132 million board feet in 1999 to 141 million board feet in 2004.

- In 2004, almost 71 percent of the saw log receipts in South Dakota were harvested from the State. Wyoming supplied another 19 percent of the saw logs processed by South Dakota's sawmills. Montana and Nebraska, combined, supplied another 10 percent of the sawmill receipts. Iowa and Minnesota, combined, supplied the rest or less than 1 percent of the roundwood processed by the State's sawmills (table 4).

- Saw log production in South Dakota decreased by 1 percent in 2004, falling from 123 million board feet in 1999 to 121 million board feet in 2004 (table 5).

- Sawmills within the State processed 82 percent of the saw logs harvested from South Dakota in 2004. Wyoming sawmills imported 17 percent of South Dakota's saw log production. Nebraska and Montana sawmills, combined, received the remaining 1 percent of saw logs harvested from South Dakota in 2004 (table 6).

- The Western Unit supplied 99 percent of the total saw logs produced in South Dakota, but only 1 percent of the hardwood saw logs came from this unit (table 7).

- Production of spruce, cedar, elm, and bur oak saw logs increased between 1999 and 2004, while production of ponderosa pine, cottonwood, ash, and black walnut saw logs decreased.

## OTHER PRODUCTS

*Due to the limited number of mills producing other products in South Dakota, receipts are not provided to avoid disclosure of individual mills.*

- Pulp and particleboard plants consumed 17 thousand cords or 5 percent of South Dakota's industrial roundwood production in 2004.

- More than 470 thousand posts, or 1 percent of the industrial roundwood produced, came from South Dakota's forest land in 2004.

- The production of cabin logs in South Dakota increased from 9 thousand cubic feet in 1999 to 198 thousand cubic feet in 2004.

- In 2004, there was a market for the expanding eastern redcedar resource in South Dakota as excelsior/shaving bolts.

*Residential fuelwood is a major nonindustrial product in South Dakota. The results of a residential fuelwood study conducted in 1994 are available in "Residential Fuelwood Consumption and Production in South Dakota, 1994," Resource Bulletin NC-171, by Dennis M. May. This report may be downloaded at: http://ncrs.fs.fed.us/pubs/.*

## TIMBER REMOVALS

- In the process of harvesting industrial roundwood in 2004, 30 million cubic feet of wood material were removed from South Dakota's forest land, the same as in 1999 (table 8).

- Seventy-one percent of the total wood material harvested from South Dakota's forests in 2004 was used for the production of primary wood products. The remainder was left on the ground as harvest residues (fig. 4).

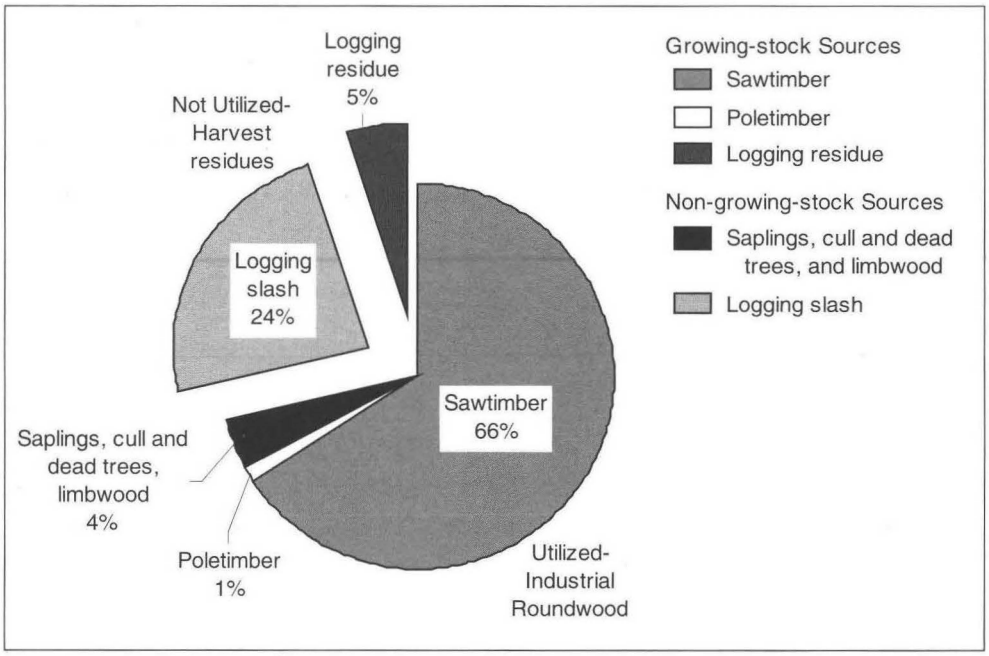


Figure 4.—*Distribution of timber removals for industrial roundwood by source of material, South Dakota, 2004.*

- Almost 22 million cubic feet of South Dakota's growing-stock inventory were removed from timberland, a 2-percent decrease from 1999 (table 8). This decrease in growing-stock removals was due to some mills processing roundwood from dead trees and tree tops.

- Ninety-three percent of the growing stock harvested was used for products and 7 percent was left on the ground as logging residue. Only 14 percent of the non-growing stock that was harvested was used for products, with the rest left as logging slash.

- Ninety-eight percent of the growing-stock removals came from the Western Forest Survey Unit (table 9).

- Limbwood accounted for more than 75 percent of the non-growing-stock sources of roundwood used for the production of primary wood products.

- In 2004, there were more than 121 million board feet of sawtimber removed from South Dakota's timberland, just 1 percent less than in 1999 (table 10).

## HARVEST RESIDUES

- In 2004, harvesting of industrial roundwood products left over 8.7 million cubic feet of harvest residues on the ground in South Dakota (table 11), 3 percent less than in 1999.

- Nearly all (99 percent) of the harvest residues produced in 2004 were produced in the Western Forest Survey Unit of South Dakota.

- Because ponderosa pine was the major species harvested in South Dakota in 2004, it makes up the majority (97 percent) of the harvest residue that was generated.

## PRIMARY MILL RESIDUES

- In converting industrial roundwood into products such as lumber, particleboard, poles and posts, and cabin logs, South Dakota's primary wood-using industry generated 383 thousand green tons of wood and bark residues, 18 percent more than in 1999 (table 12).

- Fifty percent of the mill residues produced in 2004 were in the form of coarse wood residues, such as slabs and edgings, which are suitable for chipping. Fine residue, which includes sawdust and shavings, made up another 29 percent of the mill residues produced, and bark residue accounted for the remaining 21 percent (fig. 5).

- Nearly all mill residues were used. The production of fiber products, such as pulp and particleboard, consumed 66 percent of the total residues produced by South Dakota's primary wood-using mills in 2004. Miscellaneous uses such as livestock bedding, mulch, small dimension lumber, and specialty products consumed another 21 percent of the mill residues (fig. 6).

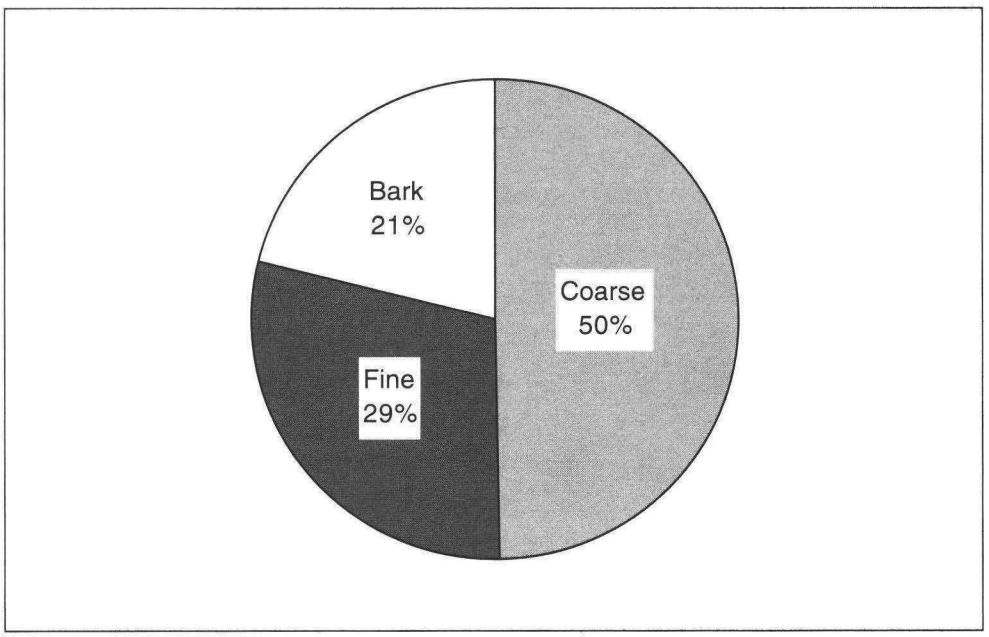


Figure 5.—*Distribution of residues generated by primary wood-using mills by type of residue, South Dakota, 2004.*

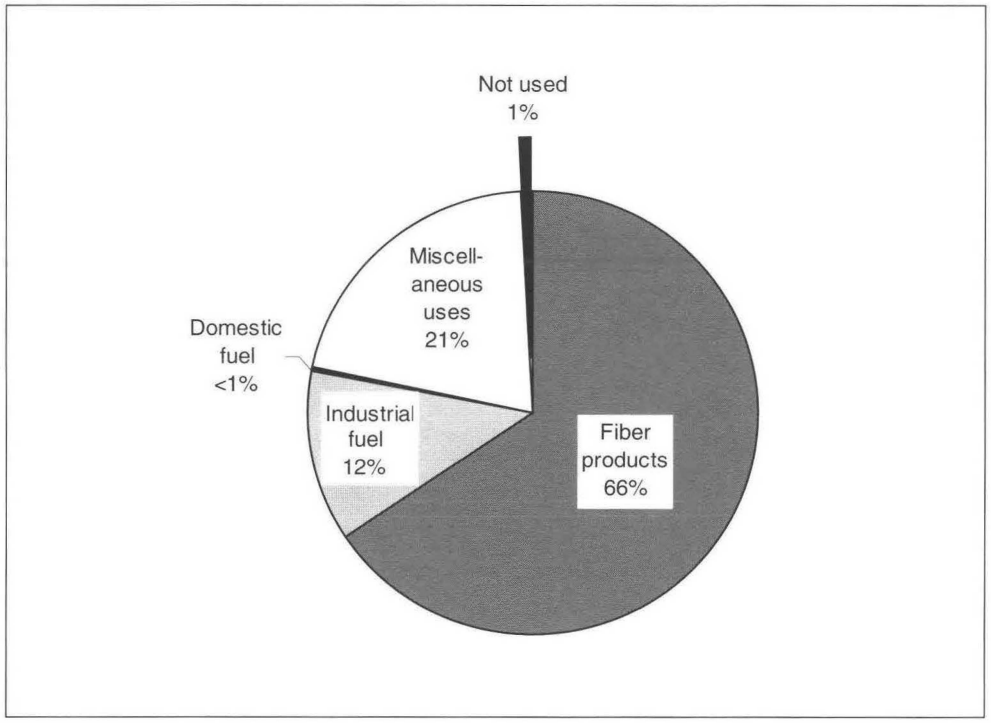


Figure 6.—*Distribution of residues generated by primary wood-using mills by method of disposal, South Dakota, 2004.*

- More than 82 percent of the wood residues were used for pulp or particleboard products. Ninety-eight percent of the coarse wood residues and 56 percent of the fine wood residues were used for pulp or particleboard production.

- Most of the bark (57 percent) was burned as industrial fuel. Miscellaneous uses consumed another 39 percent of the bark residue.

- In 2004, only 1 percent of the mill residues generated by South Dakota's primary wood-using mills remained unused. In 1999, 3 percent of the mill residues went unused.

# APPENDIX

## STUDY METHODS

This study was a cooperative effort of the South Dakota Department of Agriculture (SDDA) and the North Central Research Station (NCRS). Using mail questionnaires supplied by NCRS and designed to determine the size and composition of the State's primary wood-using industry, its use of roundwood, and its generation and disposition of wood residues, the SDDA canvassed all primary wood-using mills within the State. SDDA made followups to nonresponding mills using additional mailings, telephone calls, and personal contacts until a 100-percent response was achieved. Completed questionnaires were sent to NCRS for editing and processing.

As part of data editing and processing, all industrial roundwood volumes reported on the questionnaires were converted to standard units of measure using regional conversion factors. Timber removals by source of material and harvest residues generated during logging were estimated from standard product volumes using factors developed from logging utilization studies previously conducted by NCRS. Mill residue volumes were calculated based on the input volume, product, species, and disposition percents supplied by the mill. Finalized data on South Dakota's industrial roundwood receipts were loaded into a regional timber removals database where they were supplemented with data on out-of-State uses of South Dakota roundwood to provide a complete assessment of South Dakota's timber product output.

## DEFINITION OF TERMS

**Board foot**—Unit of measure applied to roundwood. It relates to lumber that is 1 foot long, I foot wide, and 1 inch thick (or its equivalent).

**Bolt**—A short log no more than 8 feet long, to be sawn for lumber, peeled or sliced for veneer, shaved for excelsior, or converted into shingles, cooperage stock, dimension stock, blocks, blanks, etc.

**Central stem**—The portion of a tree between a 1-foot stump and the minimum 4.0-inch top diameter outside bark, or point where the central stem breaks into limbs all of which are less than 4.0 inches diameter outside bark.

**Coarse mill residue**—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

**Commercial species**—Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam, Osage-orange, and redbud.)

**Cull removals**—Net volume of rough and rotten trees plus the net volume in sections of the central stem of growing-stock trees that do not meet regional merchantability standards harvested for industrial roundwood products.

**Cunit**—A measurement of volume equal to 100 cubic feet.

**Dead removals**—Net volume of dead trees harvested for industrial roundwood products.

**Diameter at breast height (d.b.h.)**—The outside bark diameter at 4.5 feet above the forest floor on the uphill side of the tree. For determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

**Fine mill residue**—Wood residue not suitable for chipping such as sawdust and veneer clippings.

**Forest land**—Land at least 10 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams or other bodies of water, or clearings in forest areas shall be classed as forest if less than 120 feet wide.

**Growing-stock removals**—The growing-stock volume removed from the timberland inventory by harvesting industrial roundwood products. (Note: Includes sawtimber removals, poletimber removals, and logging residues.)

**Growing-stock tree**—A live timberland tree of commercial species that meets specified standards of size, quality, and merchantability. (Note: Excludes rough, rotten, and dead trees.)

**Growing-stock volume**—Net volume of growing-stock trees 5.0 inches d.b.h. and over, from 1 foot above the ground to a minimum 4.0-inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

**Hardwoods**—Dicotyledonous trees, usually broad-leaved and deciduous.

**Harvest residues**—The total net volume of unused portions of trees cut or killed by logging. (Note: Includes both logging residues and logging slash.)

**Industrial fuelwood**—A roundwood product, with or without bark, used to generate energy at manufacturing facilities and schools, correctional institutions, or electric generating plants.

**Industrial roundwood exports**—The quantity of industrial roundwood harvested in a geographical area and transported to other geographical areas.

**Industrial roundwood imports**—The quantity of industrial roundwood received from other geographical areas.

**Industrial roundwood products**—Saw logs, pulpwood, veneer logs, poles, commercial posts, pilings, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for pulp or board products.

**Industrial roundwood production**—The quantity of industrial roundwood harvested in a geographic area plus all industrial roundwood exported to other geographical areas.

**Industrial roundwood receipts**—The quantity of industrial roundwood received by commercial mills in a geographic area plus all industrial roundwood imported from other geographical areas.

**Industrial roundwood retained**—The quantity of industrial roundwood harvested from and processed by commercial mills within the same geographical area.

**International 1/4-inch rule**—A log rule or formula for estimating the board foot volume of logs, allowing one-half inch of taper for each 4-foot length. The rule appears in a number of forms that allow for kerf. In this form, one-fourth inch of kerf is assumed. This rule is used as the USDA Forest Service standard log rule in the Eastern United States.

**Limbwood removals**—Net volume of all portions of a tree other than the central stem (including forks, large limbs, tops, and stumps) harvested for industrial roundwood products.

**Logging residue**—The net volume of unused portions of the merchantable central stem of growing-stock trees cut or killed by logging.

**Logging slash**—The net volume of unused portions of the unmerchantable (non-growing-stock) sections of trees cut or killed by logging.

**Merchantable sections**—Refers to sections of the central stem of growing-stock trees that meet either pulpwood or saw log specifications.

**Net volume**—Gross volume less deductions for rot, sweep, or other defects affecting use for roundwood products.

**Noncommercial species**—Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial roundwood products. Classified in volume tables as rough trees.

**Nonforest land**—Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, active Christmas tree plantations, orchards, nurseries, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 39.9-acre areas of water classified by the Bureau of the Census as land.) If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide and more than 1 acre to qualify as nonforest land.

**Nonforest land removals**—Net volume of trees on nonforest lands harvested for industrial roundwood products.

**Poletimber**—A growing-stock tree at least 5.0 inches d.b.h. but smaller than sawtimber size (9.0 inches d.b.h. for softwoods, 11.0 inches d.b.h. for hardwoods).

**Poletimber removals**—Net volume in the merchantable central stem of poletimber trees harvested for industrial roundwood products.

**Primary wood-using mills**—Mills receiving roundwood or chips from roundwood for processing into products such as lumber, veneer, pulp, etc.

**Primary wood-using mill residue**—Wood materials (coarse and fine) and bark generated at manufacturing plants that process industrial roundwood into principal products. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some product.

**Rotten tree**—A tree that does not meet regional merchantability standards because of excessive unsound cull.

**Rough tree**—A tree that does not meet regional merchantability standards because of excessive sound cull. Includes noncommercial tree species.

**Roundwood**—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

**Sapling**—A live tree between 1.0 and 5.0 inches d.b.h.

**Sapling removals**—Net volume in saplings harvested for industrial roundwood products.

**Saw log portion**—That portion of the central stem of sawtimber trees between the stump and the saw log top.

**Saw log top**—The point on the central stem of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7.0 inches diameter outside bark for softwoods and 9.0 inches diameter outside bark for hardwoods.

**Sawtimber removals**—As used in table 8, sawtimber removals refers to the net volume in the merchantable central stem of sawtimber trees harvested for industrial roundwood products. (Note: includes the saw log and upper stem portions of sawtimber trees.) When referring to the sawtimber volume removed from the timberland inventory as in table 10, sawtimber removals refers to the net volume in the saw log portion of sawtimber trees harvested for roundwood products or left on the ground as harvest residues, and is usually expressed in thousands of board feet (International 1/4-inch rule).

**Sawtimber tree**—A growing-stock tree containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h. and hardwoods must be at least 11.0 inches d.b.h.

**Sawtimber volume**—Net volume in the saw log portion of sawtimber trees.

**Softwoods**—Coniferous trees, usually evergreen, having needles or scale-like leaves.

**Timber product output**—The volume of roundwood products produced from an area's forests.

**Timberland**—Forest land that is producing, or is capable of producing, in excess of 20 cubic feet per acre per year of industrial roundwood products under natural conditions, is not withdrawn from timber utilization by statute or administrative regulation, and is not associated with urban or rural development.

**Tree**—A woody plant usually having one or more perennial stems, a more or less definitely formed crown of foliage, and a height of at least 12 feet at maturity.

**Upper stem portion**—That portion of the central stem of sawtimber trees between the saw log top and the minimum top diameter of 4.0 inches outside bark, or to the point where the central stem breaks into limbs.

## COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED IN THIS REPORT

**Softwoods**

- Cedar
  - Rocky Mountain juniper ..... *Juniperus scopulorum*
  - Eastern redcedar ..... *Juniperus virginiana*
- Spruce
  - White spruce ..... *Picea glauca*
  - Englemann spruce ..... *Picea engelmannii*
  - Black spruce ..... *Picea mariana*
- Ponderosa pine ..... *Pinus ponderosa*
- Other softwoods
  - Western larch ..... *Larix occidentalis*
  - Lodgepole pine ..... *Pinus contorta*
  - Red pine ..... *Pinus resinosa*
  - Western white pine ..... *Pinus monticola*
  - Austrian pine ..... *Pinus nigra*
  - Douglas-fir ..... *Pseudotsuga menziesii*

**Hardwoods**

- Hard maple
  - Sugar maple ..... *Acer saccharum*
- Soft maple
  - Boxelder ..... *Acer negundo*
  - Red maple ..... *Acer rubrum*
  - Silver maple ..... *Acer saccharinum*
- Northern catalpa ..... *Catalpa speciosa*
- Hackberry ..... *Celtis occidentalis*
- Ash
  - Black ash ..... *Fraxinus nigra*
  - White ash ..... *Fraxinus americana*
  - Green ash ..... *Fraxinus pennsylvanica*
- Honeylocust ..... *Gleditsia triacanthos*
- Black walnut ..... *Juglans nigra*
- Osage-orange ..... *Maclura pomifera*
- Cottonwood
  - Eastern cottonwood ..... *Populus deltoides*
  - Plains cottonwood ..... *Populus sargentii*
- Aspen
  - Bigtooth aspen ..... *Populus grandidentata*
  - Quaking or trembling aspen ..... *Populus tremuloides*
- Bur oak ..... *Quercus macrocarpa*
- American basswood ..... *Tilia americana*
- Elm
  - American elm ..... *Ulmus americana*
  - Slippery elm ..... *Ulmus rubra*

## TABLE TITLES

Table 1.—*Number of active primary wood-using mills by mill type, South Dakota, 1993, 1999, and 2004*

Table 2.—*Industrial roundwood receipts by species group and State of origin, South Dakota, 2004*

Table 3.—*Industrial roundwood production by Forest Survey Unit, species group, and type of product, South Dakota, 2004*

Table 4.—*Saw log receipts by Forest Survey Unit, species group, and State of origin, South Dakota, 2004 (In thousand board feet, International 1/4-inch rule)*

Table 4a.—*Saw log receipts by Forest Survey Unit, species group, and State of origin, South Dakota, 2004 (In cunits)*

Table 5.—*Saw log production and receipts by species group, South Dakota, 1999 and 2004*

Table 6.—*Saw log production by Forest Survey Unit, species group, and destination, South Dakota, 2004 (In thousand board feet, International 1/4-inch rule)*

Table 6a.—*Saw log production by Forest Survey Unit, species group, and destination, South Dakota, 2004 (In cunits)*

Table 7.—*Saw log production by Forest Survey Unit, county, and species group, South Dakota, 2004 (In thousand board feet, International 1/4-inch rule)*

Table 7a.—*Saw log production by Forest Survey Unit, county, and species group, South Dakota, 2004 (In cunits)*

Table 8.—*Timber removals for industrial roundwood by Forest Survey Unit, species group, and source of material, South Dakota, 2004*

Table 9.—*Growing-stock removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, South Dakota, 2004*

Table 10.—*Sawtimber removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, South Dakota, 2004*

Table 11.—*Harvest residues generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, South Dakota, 2004*

Table 12.—*Residues produced at primary wood-using mills by Forest Survey Unit, type of use, and residue type, South Dakota, 2004*

# TABLES

Table 1.—Number of active primary wood-using mills by mill type, South Dakota, 1993, 1999, and 2004

| Kind of mill | 1993 | 1999 | 2004 |
|---|---|---|---|
| **Sawmills** | | | |
| Large[1] | 3 | 3 | 3 |
| Medium[2] | 3 | 3 | 2 |
| Small[3] | 6 | 6 | 12 |
| Total | 12 | 12 | 17 |
| **Other mills** | | | |
| Particleboard | 1 | 1 | 1 |
| Other mill types[4] | 5 | 5 | 7 |
| Total | 6 | 6 | 8 |
| **Total mills** | 18 | 18 | 25 |

[1] Annual lumber production in excess of 5 million board feet.

[2] Annual lumber production from 1 million to 5 million board feet.

[3] Annual lumber production less than 1 million board feet.

[4] Includes posts and cabin log mills.

Table 2.—Industrial roundwood receipts by species group and State of origin, South Dakota, 2004

(In thousand cubic feet)

| Species group | Total | State of origin | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Iowa | Kansas | Minnesota | Montana | Nebraska | South Dakota | Wyoming |
| **Softwoods** | | | | | | | | |
| Cedar[1] | 16 | -- | -- | -- | -- | 3 | 13 | -- |
| Spruce | 935 | -- | -- | -- | -- | -- | 935 | -- |
| Ponderosa pine | 23,563 | -- | -- | -- | 1,340 | 1,091 | 16,915 | 4,217 |
| Other softwoods | 70 | -- | -- | -- | 40 | -- | -- | 31 |
| Total | 24,583 | -- | -- | -- | 1,380 | 1,094 | 17,862 | 4,247 |
| **Hardwoods** | | | | | | | | |
| Hard maple | 0 | -- | -- | -- | -- | -- | 0 | -- |
| Hackberry | 0 | -- | -- | -- | -- | -- | 0 | -- |
| Ash | 3 | 0 | -- | 0 | -- | -- | 2 | -- |
| Honeylocust | 0 | -- | -- | -- | -- | -- | 0 | -- |
| Black walnut | 2 | -- | -- | 1 | -- | -- | 1 | -- |
| Osage-orange | 0 | -- | 0 | -- | -- | -- | -- | -- |
| Cottonwood | 64 | 3 | -- | 4 | -- | -- | 57 | -- |
| Aspen | 1 | -- | -- | -- | -- | -- | 1 | -- |
| Bur oak | 2 | -- | -- | -- | -- | -- | 2 | -- |
| Basswood | 0 | -- | -- | -- | -- | -- | 0 | -- |
| Elm | 3 | 0 | -- | 0 | -- | -- | 2 | -- |
| Total | 75 | 3 | 0 | 5 | -- | -- | 66 | -- |
| **State total** | 24,658 | 3 | 0 | 5 | 1,380 | 1,094 | 17,928 | 4,247 |

0 = Less than 500 cubic feet.

[1] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 3.—Industrial roundwood production by Forest Survey Unit, species group, and type of product, South Dakota, 2004

**All Units**

| Species group | All products | Type of product | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Saw logs | | Pulpwood | | Posts | | Cabin logs | Excelsior/ shaving |
| | *MCF*[1] | *MBF*[2] | *MCF*[1] | *Cords*[3] | *MCF*[1] | *M pieces*[4] | *MCF*[1] | *MCF*[1] | *MCF*[1] |
| **Softwoods** | | | | | | | | | |
| Cedar[5] | 13 | 14 | 3 | -- | -- | 10 | 6 | -- | 4 |
| Spruce | 966 | 4,962 | 953 | -- | -- | -- | -- | 13 | -- |
| Ponderosa pine | 20,388 | 115,470 | 18,822 | 16,878 | 1,084 | 459 | 298 | 185 | -- |
| Other softwoods | 12 | 60 | 12 | -- | -- | -- | -- | -- | -- |
| Total | 21,379 | 120,506 | 19,789 | 16,878 | 1,084 | 469 | 305 | 198 | 4 |
| **Hardwoods** | | | | | | | | | |
| Hard maple | 0 | 0 | 0 | -- | -- | -- | -- | -- | -- |
| Hackberry | 0 | 0 | 0 | -- | -- | -- | -- | -- | -- |
| Ash | 2 | 13 | 2 | -- | -- | -- | -- | -- | -- |
| Honeylocust | 0 | 1 | 0 | -- | -- | -- | -- | -- | -- |
| Black walnut | 1 | 8 | 1 | -- | -- | -- | -- | -- | -- |
| Cottonwood | 118 | 648 | 114 | -- | -- | 4 | 4 | -- | -- |
| Aspen | 1 | 5 | 1 | -- | -- | -- | -- | -- | -- |
| Bur oak | 2 | 12 | 2 | -- | -- | -- | -- | -- | -- |
| Basswood | 0 | 0 | 0 | -- | -- | -- | -- | -- | -- |
| Elm | 2 | 14 | 2 | -- | -- | -- | -- | -- | -- |
| Total | 127 | 702 | 123 | -- | -- | 4 | 4 | -- | -- |
| **State total** | 21,506 | 121,208 | 19,912 | 16,878 | 1,084 | 473 | 308 | 198 | 4 |

**Eastern Unit**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | | | |
| Cedar[5] | 6 | 14 | 3 | -- | -- | -- | -- | -- | 4 |
| Spruce | 0 | 2 | 0 | -- | -- | -- | -- | -- | -- |
| Ponderosa pine | 45 | 276 | 45 | -- | -- | -- | -- | -- | -- |
| Total | 52 | 292 | 48 | -- | -- | -- | -- | -- | 4 |
| **Hardwoods** | | | | | | | | | |
| Hard maple | 0 | 0 | 0 | -- | -- | -- | -- | -- | -- |
| Hackberry | 0 | 0 | 0 | -- | -- | -- | -- | -- | -- |
| Ash | 2 | 13 | 2 | -- | -- | -- | -- | -- | -- |
| Honeylocust | 0 | 1 | 0 | -- | -- | -- | -- | -- | -- |
| Black walnut | 1 | 8 | 1 | -- | -- | -- | -- | -- | -- |
| Cottonwood | 114 | 648 | 114 | -- | -- | -- | -- | -- | -- |
| Bur oak | 2 | 10 | 2 | -- | -- | -- | -- | -- | -- |
| Basswood | 0 | 0 | 0 | -- | -- | -- | -- | -- | -- |
| Elm | 2 | 14 | 2 | -- | -- | -- | -- | -- | -- |
| Total | 122 | 695 | 122 | -- | -- | -- | -- | -- | -- |
| **Unit total** | 174 | 987 | 170 | -- | -- | -- | -- | -- | 4 |

(Table 3 continued on next page)

(Table 3 continued)

**Western Unit**

| Species group | All products | Type of product | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Saw logs | | Pulpwood | | Posts | | Cabin logs | Excelsior/ shaving |
| | *MCF*[1] | *MBF*[2] | *MCF*[1] | *Cords*[3] | *MCF*[1] | *M pieces*[4] | *MCF*[1] | *MCF*[1] | *MCF*[1] |
| **Softwoods** | | | | | | | | | |
| Cedar[5] | 6 | -- | -- | -- | -- | 10 | 6 | -- | -- |
| Spruce | 966 | 4,960 | 953 | -- | -- | -- | -- | 13 | -- |
| Ponderosa pine | 20,343 | 115,194 | 18,777 | 16,878 | 1,084 | 459 | 298 | 185 | -- |
| Other softwoods | 12 | 60 | 12 | -- | -- | -- | -- | -- | -- |
| Total | 21,327 | 120,214 | 19,741 | 16,878 | 1,084 | 469 | 305 | 198 | -- |
| **Hardwoods** | | | | | | | | | |
| Cottonwood | 4 | -- | -- | -- | -- | 4 | 4 | -- | -- |
| Aspen | 1 | 5 | 1 | -- | -- | -- | -- | -- | -- |
| Bur oak | 0 | 2 | 0 | -- | -- | -- | -- | -- | -- |
| Total | 5 | 8 | 1 | -- | -- | 4 | 4 | -- | -- |
| **Unit total** | 21,332 | 120,222 | 19,742 | 16,878 | 1,084 | 473 | 308 | 198 | -- |

0 = Less than 1/2 unit of measure.

[1] Thousand cubic feet.

[2] Thousand board feet, International 1/4-inch rule.

[3] Standard cords are 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

[4] Thousand pieces.

[5] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 4.—Saw log receipts by Forest Survey Unit, species group, and State of origin, South Dakota, 2004

(In thousand board feet)[1]

**All Units**

| Species group | All States | State of origin | | | | | |
|---|---|---|---|---|---|---|---|
| | | Iowa | Minnesota | Montana | Nebraska | South Dakota | Wyoming |
| **Softwoods** | | | | | | | |
| Cedar[2] | 30 | -- | -- | -- | 16 | 14 | -- |
| Spruce | 4,796 | -- | -- | -- | -- | 4,796 | -- |
| Ponderosa pine | 135,613 | -- | -- | 8,484 | 6,280 | 94,162 | 26,687 |
| Total | 140,439 | -- | -- | 8,484 | 6,296 | 98,972 | 26,687 |
| **Hardwoods** | | | | | | | |
| Hard maple | 0 | -- | -- | -- | -- | 0 | -- |
| Hackberry | 0 | -- | -- | -- | -- | 0 | -- |
| Ash | 16 | 0 | 3 | -- | -- | 13 | -- |
| Honeylocust | 1 | -- | -- | -- | -- | 1 | -- |
| Black walnut | 12 | -- | 4 | -- | -- | 8 | -- |
| Cottonwood | 349 | 23 | 23 | -- | -- | 303 | -- |
| Aspen | 5 | -- | -- | -- | -- | 5 | -- |
| Bur oak | 12 | -- | -- | -- | -- | 12 | -- |
| Basswood | 0 | -- | -- | -- | -- | 0 | -- |
| Elm | 14 | 0 | 0 | -- | -- | 14 | -- |
| Total | 412 | 24 | 30 | -- | -- | 357 | -- |
| **State total** | 140,851 | 24 | 30 | 8,484 | 6,296 | 99,329 | 26,687 |

**Eastern Unit**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | |
| Cedar[2] | 14 | -- | -- | -- | -- | 14 | -- |
| Spruce | 2 | -- | -- | -- | -- | 2 | -- |
| Ponderosa pine | 276 | -- | -- | -- | -- | 276 | -- |
| Total | 292 | -- | -- | -- | -- | 292 | -- |
| **Hardwoods** | | | | | | | |
| Hard maple | 0 | -- | -- | -- | -- | 0 | -- |
| Hackberry | 0 | -- | -- | -- | -- | 0 | -- |
| Ash | 16 | 0 | 3 | -- | -- | 13 | -- |
| Honeylocust | 1 | -- | -- | -- | -- | 1 | -- |
| Black walnut | 12 | -- | 4 | -- | -- | 8 | -- |
| Cottonwood | 349 | 23 | 23 | -- | -- | 303 | -- |
| Bur oak | 10 | -- | -- | -- | -- | 10 | -- |
| Basswood | 0 | -- | -- | -- | -- | 0 | -- |
| Elm | 14 | 0 | 0 | -- | -- | 14 | -- |
| Total | 404 | 24 | 30 | -- | -- | 350 | -- |
| **Unit total** | 696 | 24 | 30 | -- | -- | 642 | -- |

(Table 4 continued on next page)

(Table 4 continued)

**Western Unit**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | |
| Cedar[2] | 16 | -- | -- | -- | 16 | -- | -- |
| Spruce | 4,794 | -- | -- | -- | -- | 4,794 | -- |
| Ponderosa pine | 135,337 | -- | -- | 8,484 | 6,280 | 93,886 | 26,687 |
| Total | 140,147 | -- | -- | 8,484 | 6,296 | 98,680 | 26,687 |
| **Hardwoods** | | | | | | | |
| Aspen | 5 | -- | -- | -- | -- | 5 | -- |
| Bur oak | 2 | -- | -- | -- | -- | 2 | -- |
| Total | 8 | -- | -- | -- | -- | 8 | -- |
| **Unit total** | 140,155 | -- | -- | 8,484 | 6,296 | 98,688 | 26,687 |

0 = Less than 500 board feet, International 1/4-inch rule.

[1] Thousand board feet, International 1/4-inch rule.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 4a.—Saw log receipts by Forest Survey Unit, species group, and State of origin, South Dakota, 2004

(In cunits)[1]

**All Units**

| Species group | All States | State of origin | | | | | |
|---|---|---|---|---|---|---|---|
| | | Iowa | Minnesota | Montana | Nebraska | South Dakota | Wyoming |
| **Softwoods** | | | | | | | |
| Cedar[2] | 61 | -- | -- | -- | 35 | 27 | -- |
| Spruce | 9,214 | -- | -- | -- | -- | 9,214 | -- |
| Ponderosa pine | 219,962 | -- | -- | 13,404 | 10,908 | 153,484 | 42,166 |
| Total | 229,237 | -- | -- | 13,404 | 10,942 | 162,724 | 42,166 |
| **Hardwoods** | | | | | | | |
| Hard maple | 1 | -- | -- | -- | -- | 1 | -- |
| Hackberry | 1 | -- | -- | -- | -- | 1 | -- |
| Ash | 27 | 1 | 4 | -- | -- | 22 | -- |
| Honeylocust | 2 | -- | -- | -- | -- | 2 | -- |
| Black walnut | 21 | -- | 7 | -- | -- | 14 | -- |
| Cottonwood | 604 | 33 | 38 | -- | -- | 533 | -- |
| Aspen | 10 | -- | -- | -- | -- | 10 | -- |
| Bur oak | 21 | -- | -- | -- | -- | 21 | -- |
| Basswood | 0 | -- | -- | -- | -- | 0 | -- |
| Elm | 25 | 0 | 0 | -- | -- | 24 | -- |
| Total | 711 | 34 | 50 | -- | -- | 627 | -- |
| **State total** | 229,948 | 34 | 50 | 13,404 | 10,942 | 163,351 | 42,166 |

**Eastern Unit**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | |
| Cedar[2] | 27 | -- | -- | -- | -- | 27 | -- |
| Spruce | 4 | -- | -- | -- | -- | 4 | -- |
| Ponderosa pine | 449 | -- | -- | -- | -- | 449 | -- |
| Total | 480 | -- | -- | -- | -- | 480 | -- |
| **Hardwoods** | | | | | | | |
| Hard maple | 1 | -- | -- | -- | -- | 1 | -- |
| Hackberry | 1 | -- | -- | -- | -- | 1 | -- |
| Ash | 27 | 1 | 4 | -- | -- | 22 | -- |
| Honeylocust | 2 | -- | -- | -- | -- | 2 | -- |
| Black walnut | 21 | -- | 7 | -- | -- | 14 | -- |
| Cottonwood | 604 | 33 | 38 | -- | -- | 533 | -- |
| Bur oak | 17 | -- | -- | -- | -- | 17 | -- |
| Basswood | 0 | -- | -- | -- | -- | 0 | -- |
| Elm | 25 | 0 | 0 | -- | -- | 24 | -- |
| Total | 697 | 34 | 50 | -- | -- | 614 | -- |
| **Unit total** | 1,178 | 34 | 50 | -- | -- | 1,094 | -- |

(Table 4a continued on next page)

(Table 4a continued)

| | Western Unit | | | | | | |
|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | |
| Cedar[2] | 35 | -- | -- | -- | 35 | -- | -- |
| Spruce | 9,209 | -- | -- | -- | -- | 9,209 | -- |
| Ponderosa pine | 219,513 | -- | -- | 13,404 | 10,908 | 153,035 | 42,166 |
| Total | 228,757 | -- | -- | 13,404 | 10,942 | 162,244 | 42,166 |
| **Hardwoods** | | | | | | | |
| Aspen | 10 | -- | -- | -- | -- | 10 | -- |
| Bur oak | 4 | -- | -- | -- | -- | 4 | -- |
| Total | 14 | -- | -- | -- | -- | 14 | -- |
| **Unit total** | 228,770 | -- | -- | 13,404 | 10,942 | 162,257 | 42,166 |

0 = Less than 50 cubic feet.

[1] 100 cubic feet.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 5.—Saw log production and receipts by species group, South Dakota, 1999 and 2004

(In thousand board feet)[1]

| Species group | Production | | | Receipts | | |
|---|---|---|---|---|---|---|
| | 1999 | 2004 | Change | 1999 | 2004 | Change |
| **Softwoods** | | | | | | |
| Cedar[2] | 1 | 14 | 13 | 1 | 30 | 29 |
| Spruce | 309 | 4,962 | 4,653 | 94 | 4,796 | 4,702 |
| Ponderosa pine | 120,615 | 115,470 | -5,145 | 130,450 | 135,613 | 5,163 |
| Other softwoods | -- | 60 | 60 | 0 | -- | 0 |
| Total | 120,926 | 120,506 | -420 | 130,546 | 140,439 | 9,893 |
| **Hardwoods** | | | | | | |
| Hard maple | -- | 0 | 0 | -- | 0 | 0 |
| Soft maple | 0 | -- | 0 | 1 | -- | -1 |
| Catalpa | -- | -- | -- | 1 | -- | -1 |
| Hackberry | 1 | 0 | -1 | 1 | 0 | -1 |
| Ash | 31 | 13 | -18 | 38 | 16 | -22 |
| Honeylocust | 1 | 1 | 0 | 1 | 1 | 0 |
| Black walnut | 18 | 8 | -10 | 25 | 12 | -13 |
| Cottonwood | 1,757 | 648 | -1,109 | 1,333 | 349 | -984 |
| Aspen | -- | 5 | 5 | -- | 5 | 5 |
| Bur oak | 1 | 12 | 11 | 29 | 12 | -17 |
| Basswood | -- | 0 | 0 | 1 | 0 | -1 |
| Elm | 2 | 14 | 12 | 3 | 14 | 11 |
| Total | 1,811 | 702 | -1,109 | 1,432 | 412 | -1,020 |
| **All species** | 122,736 | 121,208 | -1,528 | 131,978 | 140,851 | 8,873 |

0 = Less than 500 board feet.

[1] International 1/4-inch rule.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 6.—Saw log production by Forest Survey Unit, species group, and destination, South Dakota, 2004

(In thousand board feet)[1]

**All Units**

| Species group | Total | Destination | | | |
|---|---|---|---|---|---|
| | | Montana | Nebraska | South Dakota | Wyoming |
| **Softwoods** | | | | | |
| Cedar[2] | 14 | -- | -- | 14 | -- |
| Spruce | 4,962 | -- | -- | 4,796 | 166 |
| Ponderosa pine | 115,470 | 1,000 | -- | 94,162 | 20,308 |
| Other softwoods | 60 | -- | -- | -- | 60 |
| Total | 120,506 | 1,000 | -- | 98,972 | 20,534 |
| **Hardwoods** | | | | | |
| Hard maple | 0 | -- | -- | 0 | -- |
| Hackberry | 0 | -- | -- | 0 | -- |
| Ash | 13 | -- | -- | 13 | -- |
| Honeylocust | 1 | -- | -- | 1 | -- |
| Black walnut | 8 | -- | -- | 8 | -- |
| Cottonwood | 648 | -- | 345 | 303 | -- |
| Aspen | 5 | -- | -- | 5 | -- |
| Bur oak | 12 | -- | -- | 12 | -- |
| Basswood | 0 | -- | -- | 0 | -- |
| Elm | 14 | -- | -- | 14 | -- |
| Total | 702 | -- | 345 | 357 | -- |
| **State total** | 121,208 | 1,000 | 345 | 99,329 | 20,534 |

**Eastern Unit**

| | | | | | |
|---|---|---|---|---|---|
| **Softwoods** | | | | | |
| Cedar[2] | 14 | -- | -- | 14 | -- |
| Spruce | 2 | -- | -- | 2 | -- |
| Ponderosa pine | 276 | -- | -- | 276 | -- |
| Total | 292 | -- | -- | 292 | -- |
| **Hardwoods** | | | | | |
| Hard maple | 0 | -- | -- | 0 | -- |
| Hackberry | 0 | -- | -- | 0 | -- |
| Ash | 13 | -- | -- | 13 | -- |
| Honeylocust | 1 | -- | -- | 1 | -- |
| Black walnut | 8 | -- | -- | 8 | -- |
| Cottonwood | 648 | -- | 345 | 303 | -- |
| Bur oak | 10 | -- | -- | 10 | -- |
| Basswood | 0 | -- | -- | 0 | -- |
| Elm | 14 | -- | -- | 14 | -- |
| Total | 695 | -- | 345 | 350 | -- |
| **Unit total** | 987 | -- | 345 | 642 | -- |

(Table 6 continued on next page)

(Table 6 continued)

| | Western Unit | | | | |
|---|---|---|---|---|---|
| **Softwoods** | | | | | |
| Spruce | 4,960 | -- | -- | 4,794 | 166 |
| Ponderosa pine | 115,194 | 1,000 | -- | 93,866 | 20,308 |
| Other softwoods | 60 | -- | -- | -- | 60 |
| Total | 120,214 | 1,000 | -- | 98,680 | 20,534 |
| **Hardwoods** | | | | | |
| Aspen | 5 | -- | -- | 5 | -- |
| Bur oak | 2 | -- | -- | 2 | -- |
| Total | 8 | -- | -- | 8 | -- |
| **Unit total** | 120,222 | 1,000 | -- | 98,688 | 20,534 |

0 = Less than 500 board feet, International 1/4-inch rule.

[1] Thousand board feet, International 1/4-inch rule.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 6a.—Saw log production by Forest Survey Unit, species group, and destination, South Dakota, 2004

(In cunits)[1]

**All Units**

| Species group | Total | Destination | | | |
|---|---|---|---|---|---|
| | | Montana | Nebraska | South Dakota | Wyoming |
| **Softwoods** | | | | | |
| Cedar[2] | 27 | -- | -- | 27 | -- |
| Spruce | 9,532 | -- | -- | 9,214 | 319 |
| Ponderosa pine | 188,216 | 1,630 | -- | 153,484 | 33,102 |
| Other softwoods | 115 | -- | -- | -- | 115 |
| Total | 197,890 | 1,630 | -- | 162,724 | 33,536 |
| **Hardwoods** | | | | | |
| Hard maple | 1 | -- | -- | 1 | -- |
| Hackberry | 1 | -- | -- | 1 | -- |
| Ash | 22 | -- | -- | 22 | -- |
| Honeylocust | 2 | -- | -- | 2 | -- |
| Black walnut | 14 | -- | -- | 14 | -- |
| Cottonwood | 1,140 | -- | 607 | 533 | -- |
| Aspen | 10 | -- | -- | 10 | -- |
| Bur oak | 21 | -- | -- | 21 | -- |
| Basswood | 0 | -- | -- | 0 | -- |
| Elm | 24 | -- | -- | 24 | -- |
| Total | 1,234 | -- | 607 | 627 | -- |
| **State total** | 199,125 | 1,630 | 607 | 163,351 | 33,536 |

**Eastern Unit**

| | | | | | |
|---|---|---|---|---|---|
| **Softwoods** | | | | | |
| Cedar[2] | 27 | -- | -- | 27 | -- |
| Spruce | 4 | -- | -- | 4 | -- |
| Ponderosa pine | 449 | -- | -- | 449 | -- |
| Total | 480 | -- | -- | 480 | -- |
| **Hardwoods** | | | | | |
| Hard maple | 1 | -- | -- | 1 | -- |
| Hackberry | 1 | -- | -- | 1 | -- |
| Ash | 22 | -- | -- | 22 | -- |
| Honeylocust | 2 | -- | -- | 2 | -- |
| Black walnut | 14 | -- | -- | 14 | -- |
| Cottonwood | 1,140 | -- | 607 | 533 | -- |
| Bur oak | 17 | -- | -- | 17 | -- |
| Basswood | 0 | -- | -- | 0 | -- |
| Elm | 24 | -- | -- | 24 | -- |
| Total | 1,221 | -- | 607 | 614 | -- |
| **Unit total** | 1,701 | -- | 607 | 1,094 | -- |

(Table 6a continued on next page)

(Table 6a continued)

**Western Unit**

| | | | | | |
|---|---|---|---|---|---|
| **Softwoods** | | | | | |
| Spruce | 9,528 | -- | -- | 9,209 | 319 |
| Ponderosa pine | 187,767 | 1,630 | -- | 153,035 | 33,102 |
| Other softwoods | 115 | -- | -- | -- | 115 |
| Total | 197,410 | 1,630 | -- | 162,244 | 33,536 |
| **Hardwoods** | | | | | |
| Aspen | 10 | -- | -- | 10 | -- |
| Bur oak | 4 | -- | -- | 4 | -- |
| Total | 14 | -- | -- | 14 | -- |
| **Unit total** | 197,424 | 1,630 | -- | 162,257 | 33,536 |

0 = Less than 50 cubic feet.

[1] 100 cubic feet.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 7.—Saw log production by Forest Survey Unit, county, and species group, South Dakota, 2004

(In thousand board feet)[1]

| Forest Survey Unit and county | All species | Species group | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Softwoods | | | | | Hardwoods | | | | | | | | | | | |
| | | Cedar[2] | Spruce | Pond-erosa pine | Other soft-woods | Total soft-woods | Hard maple | Hack-berry | Ash | Honey-locust | Black walnut | Cotton-wood | Aspen | Bur oak | Bass-wood | Elm | Total hard-woods |
| **Eastern Unit** | | | | | | | | | | | | | | | | | | |
| Bennett | 345 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 345 | -- | -- | -- | -- | 345 |
| Brookings | 7 | 1 | 0 | 0 | -- | 1 | 0 | -- | 0 | -- | 0 | 3 | -- | 0 | 0 | 2 | 6 |
| Brule | 6 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 4 |
| Charles Mix | 6 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 4 |
| Clay | 20 | -- | -- | 1 | -- | 1 | -- | -- | -- | -- | -- | 19 | -- | -- | -- | 0 | 19 |
| Codington | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Deuel | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Gregory | 7 | 3 | -- | -- | -- | 3 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 4 |
| Hamlin | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Kingsbury | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Lake | 6 | 1 | 0 | 0 | -- | 1 | 0 | 0 | 1 | 0 | 1 | 1 | -- | 0 | -- | 0 | 4 |
| Lincoln | 38 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 1 | 34 | -- | -- | -- | 1 | 37 |
| Lyman | 6 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 4 |
| McCook | 22 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 1 | 19 | -- | -- | -- | 0 | 21 |
| Minnehaha | 102 | -- | 1 | 1 | -- | 2 | -- | 0 | 2 | 0 | 1 | 95 | -- | -- | -- | 1 | 100 |
| Moody | 22 | 1 | 0 | 0 | -- | 2 | 0 | 0 | 1 | 0 | 1 | 17 | -- | 0 | -- | 0 | 20 |
| Sanborn | 70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 70 | -- | -- | -- | -- | 70 |
| Todd | 270 | -- | -- | 270 | -- | 270 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tripp | 6 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 4 |
| Turner | 22 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 1 | 19 | -- | -- | -- | 0 | 21 |
| Union | 20 | -- | -- | 1 | -- | 1 | -- | -- | -- | -- | -- | 19 | -- | -- | -- | 0 | 19 |
| Total | 987 | 14 | 2 | 276 | -- | 292 | 0 | 0 | 13 | 1 | 8 | 648 | -- | 10 | 0 | 14 | 695 |
| **Western Unit** | | | | | | | | | | | | | | | | | | |
| Custer | 13,757 | -- | 2,160 | 11,597 | -- | 13,757 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fall River | 882 | -- | 486 | 396 | -- | 882 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Harding | 2,709 | -- | -- | 2,709 | -- | 2,709 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lawrence | 38,949 | -- | 739 | 38,202 | -- | 38,941 | -- | -- | -- | -- | -- | -- | 5 | 2 | -- | -- | 8 |
| Meade | 11,868 | -- | -- | 11,868 | -- | 11,868 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pennington | 52,057 | -- | 1,575 | 50,422 | 60 | 52,057 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total | 120,222 | -- | 4,960 | 115,194 | 60 | 120,214 | -- | -- | -- | -- | -- | -- | 5 | 2 | -- | -- | 8 |
| **State total** | 121,208 | 14 | 4,962 | 115,470 | 60 | 120,506 | 0 | 0 | 13 | 1 | 8 | 648 | 5 | 12 | 0 | 14 | 702 |

0 = Less than 500 board feet, International 1/4-inch rule.

[1] Thousand board feet, International 1/4-inch rule.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 7a.—Saw log production by Forest Survey Unit, county, and species group, South Dakota, 2004

(In cunits)[1]

| Forest Survey Unit and county | All species | Species group: Softwoods: Cedar[2] | Spruce | Pond-erosa pine | Other soft-woods | Total soft-woods | Hardwoods: Hard maple | Hack-berry | Ash | Honey-locust | Black walnut | Cotton-wood | Aspen | Bur oak | Bass-wood | Elm | Total hard-woods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Eastern Unit** | | | | | | | | | | | | | | | | | |
| Bennett | 607 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 607 | -- | -- | -- | -- | 607 |
| Brookings | 13 | 2 | 0 | 1 | -- | 3 | 0 | -- | 1 | -- | 0 | 5 | -- | 0 | 0 | 4 | 10 |
| Brule | 10 | 4 | -- | -- | -- | 4 | -- | -- | 2 | -- | 1 | -- | -- | 3 | -- | 0 | 6 |
| Charles Mix | 10 | 4 | -- | -- | -- | 4 | -- | -- | 2 | -- | 1 | -- | -- | 3 | -- | 0 | 6 |
| Clay | 35 | -- | -- | 1 | -- | 1 | -- | -- | -- | -- | -- | 33 | -- | -- | -- | 1 | 34 |
| Codington | 6 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 3 | -- | -- | 0 | 3 | 6 |
| Deuel | 6 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 3 | -- | -- | 0 | 3 | 6 |
| Gregory | 12 | 5 | -- | -- | -- | 5 | -- | -- | 2 | -- | 1 | -- | -- | 4 | -- | 0 | 6 |
| Hamlin | 6 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 3 | -- | -- | 0 | 3 | 6 |
| Kingsbury | 6 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 3 | -- | -- | 0 | 3 | 6 |
| Lake | 10 | 2 | 0 | 1 | -- | 3 | 0 | 0 | 2 | 0 | 2 | 2 | -- | 0 | -- | 1 | 7 |
| Lincoln | 67 | -- | 0 | 1 | -- | 2 | -- | 0 | 2 | 0 | 2 | 60 | -- | -- | -- | 1 | 65 |
| Lyman | 10 | 4 | -- | -- | -- | 4 | -- | -- | 2 | -- | 1 | -- | -- | 3 | -- | 0 | 6 |
| McCook | 39 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 2 | 33 | -- | -- | -- | 1 | 37 |
| Minnehaha | 179 | -- | 2 | 2 | -- | 4 | -- | 0 | 4 | 0 | 2 | 167 | -- | -- | -- | 2 | 175 |
| Moody | 38 | 2 | 0 | 1 | -- | 3 | 0 | 0 | 2 | 0 | 2 | 29 | -- | 0 | -- | 1 | 35 |
| Sanborn | 123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 123 | -- | -- | -- | -- | 123 |
| Todd | 440 | -- | -- | 440 | -- | 440 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tripp | 10 | 4 | -- | -- | -- | 4 | -- | -- | 2 | -- | 1 | -- | -- | 3 | -- | 0 | 6 |
| Turner | 39 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 2 | 33 | -- | -- | -- | 1 | 37 |
| Union | 35 | -- | -- | 1 | -- | 1 | -- | -- | -- | -- | -- | 33 | -- | -- | -- | 1 | 34 |
| Total | 1,701 | 27 | 4 | 449 | -- | 480 | 1 | 1 | 22 | 2 | 14 | 1,140 | -- | 17 | 0 | 24 | 1,221 |
| **Western Unit** | | | | | | | | | | | | | | | | | |
| Custer | 23,053 | -- | 4,149 | 18,903 | -- | 23,053 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fall River | 1,580 | -- | 934 | 646 | -- | 1,580 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Harding | 4,415 | -- | -- | 4,415 | -- | 4,415 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lawrence | 63,703 | -- | 1,420 | 62,269 | -- | 63,689 | -- | -- | -- | -- | -- | -- | 10 | 4 | -- | -- | 14 |
| Meade | 19,345 | -- | -- | 19,345 | -- | 19,345 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pennington | 85,328 | -- | 3,025 | 82,188 | 115 | 85,328 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total | 197,424 | -- | 9,528 | 187,767 | 115 | 197,410 | -- | -- | -- | -- | -- | -- | 10 | 4 | -- | -- | 14 |
| **State total** | 199,125 | 27 | 9,532 | 188,216 | 115 | 197,890 | 1 | 1 | 22 | 2 | 14 | 1,140 | 10 | 21 | 0 | 24 | 1,234 |

0 = Less than 50 cubic feet.

[1] 100 cubic feet.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 8.—Timber removals for industrial roundwood by Forest Survey Unit, species group, and source of material, South Dakota, 2004[1]

(In thousand cubic feet)

**All Units**

| Species group | Growing stock: Used for products: Saw-timber | Growing stock: Used for products: Pole-timber | Growing stock: Logging residue (not used) | Growing stock: Total growing stock | Non-growing stock: Used for products: Limbwood | Non-growing stock: Used for products: Saplings | Non-growing stock: Used for products: Cull trees | Non-growing stock: Used for products: Dead trees | Non-growing stock: Logging slash (not used) | Non-growing stock: Total non-growing stock | Total material used for products | Harvest residue (total not used) | Total material harvested |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | | | | | | | |
| Cedar[2] | 4.8 | 2.7 | 0.5 | 8.0 | 0.1 | 0.5 | 0 | 4.5 | 0.7 | 5.9 | 12.6 | 1.2 | 13.8 |
| Spruce | 898.5 | 30.2 | 27.2 | 955.8 | 37.2 | -- | 0.5 | -- | 199.2 | 236.9 | 966.4 | 226.4 | 1,192.8 |
| Ponderosa pine | 18,862.8 | 378.8 | 1,462.1 | 20,703.7 | 865.8 | 75.8 | 6.8 | 198.2 | 6,895.1 | 8,041.7 | 20,388.2 | 8,357.3 | 28,745.4 |
| Other softwoods | 10.7 | 0.4 | 0.3 | 11.4 | 0.4 | -- | 0 | -- | 2.4 | 2.8 | 11.5 | 2.7 | 14.2 |
| Total | 19,776.8 | 412.1 | 1,490.1 | 21,678.9 | 903.6 | 76.2 | 7.3 | 202.7 | 7,097.5 | 8,287.3 | 21,378.7 | 8,587.5 | 29,966.3 |
| **Hardwoods** | | | | | | | | | | | | | |
| Hard maple | 0 | 0 | 0 | 0.1 | 0 | -- | 0 | -- | 0 | 0 | 0.1 | 0 | 0.1 |
| Hackberry | 0.1 | 0 | 0 | 0.1 | 0 | -- | 0 | -- | 0 | 0 | 0.1 | 0 | 0.1 |
| Ash | 2.1 | 0 | 0.3 | 2.4 | 0 | -- | 0 | -- | 0.5 | 0.6 | 2.2 | 0.9 | 3.0 |
| Honeylocust | 0.2 | 0 | 0 | 0.2 | 0 | -- | 0 | -- | 0 | 0 | 0.2 | 0.1 | 0.2 |
| Black walnut | 1.3 | 0.1 | 0.3 | 1.6 | 0 | -- | 0 | -- | 0.5 | 0.6 | 1.4 | 0.8 | 2.2 |
| Cottonwood | 102.1 | 6.6 | 21.8 | 130.4 | 3.0 | -- | 2.3 | 3.5 | 40.7 | 49.5 | 117.5 | 62.4 | 180.0 |
| Aspen | 0.8 | 0.2 | 0 | 1.0 | 0 | -- | 0 | -- | 0.1 | 0.1 | 1.0 | 0.1 | 1.1 |
| Bur oak | 2.0 | 0.0 | 0.3 | 2.3 | 0 | -- | 0 | -- | 0.5 | 0.6 | 2.1 | 0.8 | 2.9 |
| Basswood | 0 | 0 | 0 | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 0 |
| Elm | 2.2 | 0.1 | 0.5 | 2.8 | 0.1 | -- | 0 | -- | 0.9 | 1.0 | 2.4 | 1.3 | 3.8 |
| Total | 110.8 | 7.0 | 23.2 | 141.0 | 3.2 | -- | 2.5 | 3.5 | 43.3 | 52.5 | 127.0 | 66.5 | 193.5 |
| **State total** | 19,887.6 | 419.1 | 1,513.3 | 21,819.9 | 906.8 | 76.2 | 9.7 | 206.3 | 7,140.8 | 8,339.8 | 21,505.7 | 8,654.0 | 30,159.8 |

**Eastern Unit**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | | | | | | | |
| Cedar[2] | 4.6 | 1.5 | 0.4 | 6.5 | 0.1 | -- | 0 | -- | 0.6 | 0.7 | 6.2 | 1.1 | 7.2 |
| Spruce | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | -- | 0 | -- | 0.1 | 0.1 | 0.4 | 0.1 | 0.5 |
| Ponderosa pine | 44.0 | 0.4 | 3.4 | 47.9 | -- | -- | -- | 0.5 | 16.3 | 16.7 | 44.9 | 19.7 | 64.7 |
| Total | 49.0 | 1.9 | 3.9 | 54.8 | 0.1 | -- | 0 | 0.5 | 17.0 | 17.6 | 51.5 | 20.9 | 72.4 |
| **Hardwoods** | | | | | | | | | | | | | |
| Hard maple | 0.0 | 0 | 0 | 0.1 | 0 | -- | 0 | -- | 0 | 0 | 0.1 | 0 | 0.1 |
| Hackberry | 0.1 | 0 | 0 | 0.1 | 0 | -- | 0 | -- | 0 | 0 | 0.1 | 0 | 0.1 |
| Ash | 2.1 | 0 | 0.3 | 2.4 | 0 | -- | 0 | -- | 0.5 | 0.6 | 2.2 | 0.9 | 3.0 |
| Honeylocust | 0.2 | 0 | 0 | 0.2 | 0 | -- | 0 | -- | 0 | 0 | 0.2 | 0.1 | 0.2 |
| Black walnut | 1.3 | 0.1 | 0.3 | 1.6 | 0 | -- | 0 | -- | 0.5 | 0.6 | 1.4 | 0.8 | 2.2 |
| Cottonwood | 102.1 | 6.6 | 21.8 | 130.4 | 3.0 | -- | 2.3 | -- | 40.7 | 46.0 | 114.0 | 62.4 | 176.4 |
| Bur oak | 1.7 | 0 | 0.2 | 1.9 | 0 | -- | 0 | -- | 0.4 | 0.5 | 1.7 | 0.7 | 2.4 |
| Basswood | 0 | 0 | 0 | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 0 |
| Elm | 2.2 | 0.1 | 0.5 | 2.8 | 0.1 | -- | 0 | -- | 0.9 | 1.0 | 2.4 | 1.3 | 3.8 |
| Total | 109.6 | 6.8 | 23.1 | 139.6 | 3.2 | -- | 2.4 | -- | 43.1 | 48.7 | 122.1 | 66.2 | 188.3 |
| **Unit total** | 158.6 | 8.8 | 27.0 | 194.4 | 3.3 | -- | 2.4 | 0.5 | 60.1 | 66.3 | 173.6 | 87.1 | 260.7 |

(Table 8 continued on next page)

(Table 8 continued)

| | Western Unit | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Softwoods** | | | | | | | | | | | | | |
| Cedar[2] | 0.2 | 1.2 | 0 | 1.5 | -- | 0.5 | -- | 4.5 | 0.1 | 5.1 | 6.5 | 0.1 | 6.6 |
| Spruce | 898.1 | 30.2 | 27.2 | 955.4 | 37.2 | -- | 0.5 | -- | 199.1 | 236.8 | 966.0 | 226.3 | 1,192.2 |
| Ponderosa pine | 18,818.8 | 378.3 | 1,458.7 | 20,655.8 | 865.8 | 75.8 | 6.8 | 197.7 | 6,878.9 | 8,025.0 | 20,343.2 | 8,337.6 | 28,680.8 |
| Other softwoods | 10.7 | 0.4 | 0.3 | 11.4 | 0.4 | -- | 0.0 | -- | 2.4 | 2.8 | 11.5 | 2.7 | 14.2 |
| Total | 19,727.8 | 410.1 | 1,486.2 | 21,624.1 | 903.5 | 76.2 | 7.3 | 202.3 | 7,080.5 | 8,269.8 | 21,327.2 | 8,566.7 | 29,893.9 |
| **Hardwoods** | | | | | | | | | | | | | |
| Cottonwood | -- | -- | -- | -- | -- | -- | -- | 3.5 | -- | 3.5 | 3.5 | -- | 3.5 |
| Aspen | 0.8 | 0.2 | 0 | 1.0 | 0 | -- | 0 | -- | 0.1 | 0.1 | 1.0 | 0.1 | 1.1 |
| Bur oak | 0.4 | 0.0 | 0.1 | 0.4 | 0 | -- | 0 | -- | 0.1 | 0.1 | 0.4 | 0.1 | 0.5 |
| Total | 1.1 | 0.2 | 0.1 | 1.4 | 0 | -- | 0 | 3.5 | 0.2 | 3.8 | 4.9 | 0.3 | 5.2 |
| **Unit total** | 19,728.9 | 410.3 | 1,486.3 | 21,625.5 | 903.5 | 76.2 | 7.3 | 205.8 | 7,080.7 | 8,273.5 | 21,332.1 | 8,567.0 | 29,899.0 |

0 = Less than 50 cubic feet.

[1] Based on factors obtained from regional utilization studies.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 9.—Growing-stock removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, South Dakota, 2004

(In thousand cubic feet)

| Forest Survey Unit and county | All species | Species group | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Softwoods | | | | | Hardwoods | | | | | | | | | | | |
| | | Cedar[1] | Spruce | Ponderosa pine | Other softwoods | Total softwoods | Hard maple | Hackberry | Ash | Honeylocust | Black walnut | Cottonwood | Aspen | Bur oak | Basswood | Elm | Total hardwoods |
| **Eastern Unit** | | | | | | | | | | | | | | | | | | |
| Bennett | 69 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 69 | -- | -- | -- | -- | 69 |
| Brookings | 1 | 0 | 0 | 0 | -- | 0 | 0 | -- | 0 | -- | 0 | 1 | -- | 0 | 0 | 0 | 1 |
| Brule | 1 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 1 |
| Charles Mix | 1 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 1 |
| Clay | 4 | -- | -- | 0 | -- | 0 | -- | -- | -- | -- | -- | 4 | -- | -- | -- | 0 | 4 |
| Codington | 1 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 1 |
| Deuel | 1 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 1 |
| Gregory | 5 | 4 | -- | -- | -- | 4 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 1 |
| Hamlin | 1 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 1 |
| Kingsbury | 1 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 1 |
| Lake | 1 | 0 | 0 | 0 | -- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | 0 | -- | 0 | 1 |
| Lincoln | 8 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 7 | -- | -- | -- | 0 | 7 |
| Lyman | 1 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 1 |
| McCook | 4 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 4 | -- | -- | -- | 0 | 4 |
| Minnehaha | 20 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 19 | -- | -- | -- | 0 | 20 |
| Moody | 4 | 0 | 0 | 0 | -- | 0 | 0 | 0 | 0 | 0 | 0 | 3 | -- | 0 | -- | 0 | 4 |
| Sanborn | 14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14 | -- | -- | -- | -- | 14 |
| Todd | 47 | -- | -- | 47 | -- | 47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tripp | 1 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 1 |
| Turner | 4 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 4 | -- | -- | -- | 0 | 4 |
| Union | 4 | -- | -- | 0 | -- | 0 | -- | -- | -- | -- | -- | 4 | -- | -- | -- | 0 | 4 |
| Total | 194 | 6 | 0 | 48 | -- | 55 | 0 | 0 | 2 | 0 | 2 | 130 | -- | 2 | 0 | 3 | 140 |
| **Western Unit** | | | | | | | | | | | | | | | | | | |
| Custer | 2,562 | -- | 410 | 2,152 | -- | 2,562 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fall River | 161 | -- | 92 | 69 | -- | 161 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Harding | 471 | -- | -- | 471 | -- | 471 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lawrence | 6,944 | -- | 153 | 6,789 | -- | 6,943 | -- | -- | -- | -- | -- | -- | 1 | 0 | -- | -- | 1 |
| Meade | 2,129 | -- | -- | 2,129 | -- | 2,129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pennington | 9,358 | 1 | 299 | 9,046 | 11 | 9,358 | -- | -- | -- | -- | -- | 0 | -- | -- | -- | -- | 0 |
| Total | 21,626 | 1 | 955 | 20,656 | 11 | 21,624 | -- | -- | -- | -- | -- | 0 | 1 | 0 | -- | -- | 1 |
| **State total** | 21,820 | 8 | 956 | 20,704 | 11 | 21,679 | 0 | 0 | 2 | 0 | 2 | 130 | 1 | 2 | 0 | 3 | 141 |

0 = Less than 500 cubic feet.

[1] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 10.—Sawtimber removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, South Dakota, 2004

(In thousand board feet)[1]

| Forest Survey Unit and county | All species | Species group | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Softwoods | | | | | Hardwoods | | | | | | | | | | |
| | | Cedar[2] | Spruce | Ponderosa pine | Other softwoods | Total softwoods | Hard maple | Hackberry | Ash | Honeylocust | Black walnut | Cottonwood | Aspen | Bur oak | Basswood | Elm | Total hardwoods |
| **Eastern Unit** | | | | | | | | | | | | | | | | | |
| Bennett | 346 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 346 | -- | -- | -- | -- | 346 |
| Brookings | 7 | 1 | 0 | 0 | -- | 1 | 0 | -- | 0 | -- | 0 | 3 | -- | 0 | 0 | 2 | 6 |
| Brule | 5 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 3 |
| Charles Mix | 5 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 3 |
| Clay | 20 | -- | -- | 1 | -- | 1 | -- | -- | -- | -- | -- | 19 | -- | -- | -- | 0 | 19 |
| Codington | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Deuel | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Gregory | 21 | 18 | -- | -- | -- | 18 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 4 |
| Hamlin | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Kingsbury | 4 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 2 | -- | -- | 0 | 2 | 3 |
| Lake | 5 | 1 | 0 | 0 | -- | 1 | 0 | 0 | 1 | 0 | 1 | 1 | -- | 0 | -- | 0 | 4 |
| Lincoln | 38 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 1 | 34 | -- | -- | -- | 1 | 37 |
| Lyman | 5 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 3 |
| McCook | 22 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 1 | 19 | -- | -- | -- | 0 | 21 |
| Minnehaha | 102 | -- | 1 | 1 | -- | 2 | -- | 0 | 2 | 0 | 1 | 95 | -- | -- | -- | 1 | 100 |
| Moody | 21 | 1 | 0 | 0 | -- | 2 | 0 | 0 | 1 | 0 | 1 | 17 | -- | 0 | -- | 0 | 20 |
| Sanborn | 70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 70 | -- | -- | -- | -- | 70 |
| Todd | 268 | -- | -- | 268 | -- | 268 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tripp | 5 | 2 | -- | -- | -- | 2 | -- | -- | 1 | -- | 0 | -- | -- | 2 | -- | 0 | 3 |
| Turner | 22 | -- | 0 | 1 | -- | 1 | -- | 0 | 1 | 0 | 1 | 19 | -- | -- | -- | 0 | 21 |
| Union | 20 | -- | -- | 1 | -- | 1 | -- | -- | -- | -- | -- | 19 | -- | -- | -- | 0 | 19 |
| Total | 999 | 28 | 2 | 274 | -- | 304 | 0 | 0 | 13 | 1 | 8 | 649 | -- | 10 | 0 | 14 | 695 |
| **Western Unit** | | | | | | | | | | | | | | | | | |
| Custer | 13,947 | -- | 1,996 | 11,951 | -- | 13,947 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fall River | 843 | -- | 449 | 394 | -- | 843 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Harding | 2,692 | -- | -- | 2,692 | -- | 2,692 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lawrence | 39,248 | -- | 747 | 38,495 | -- | 39,242 | -- | -- | -- | -- | -- | -- | 4 | 2 | -- | -- | 6 |
| Meade | 12,115 | -- | -- | 12,115 | -- | 12,115 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pennington | 51,694 | -- | 1,455 | 50,183 | 55 | 51,694 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total | 120,539 | -- | 4,647 | 115,830 | 55 | 120,533 | -- | -- | -- | -- | -- | -- | 4 | 2 | -- | -- | 6 |
| **State total** | 121,538 | 28 | 4,649 | 116,104 | 55 | 120,837 | 0 | 0 | 13 | 1 | 8 | 649 | 4 | 12 | 0 | 14 | 701 |

0 = Less than 500 board feet.

[1] International 1/4-inch rule.

[2] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 11.—Harvest residues generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, South Dakota, 2004

(In thousand cubic feet)

| Forest Survey Unit and county | All species | Species group | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Softwoods | | | | | Hardwoods | | | | | | | | | | |
| | | Cedar[1] | Spruce | Ponderosa pine | Other softwoods | Total softwoods | Hard maple | Hackberry | Ash | Honeylocust | Black walnut | Cottonwood | Aspen | Bur oak | Basswood | Elm | Total hardwoods |
| **Eastern Unit** | | | | | | | | | | | | | | | | | |
| Bennett | 33 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 33 | -- | -- | -- | -- | 33 |
| Brookings | 1 | 0 | 0 | 0 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | -- | 0 | 0 | 0 | 1 |
| Brule | 0 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 0 |
| Charles Mix | 0 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 0 |
| Clay | 2 | -- | -- | 0 | -- | 0 | -- | -- | -- | -- | -- | 2 | -- | -- | -- | 0 | 2 |
| Codington | 0 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 0 |
| Deuel | 0 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 0 |
| Gregory | 1 | 1 | -- | -- | -- | 1 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 0 |
| Hamlin | 0 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 0 |
| Kingsbury | 0 | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 0 |
| Lake | 0 | 0 | 0 | 0 | -- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | 0 | -- | 0 | 0 |
| Lincoln | 4 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 3 | -- | -- | -- | 0 | 4 |
| Lyman | 0 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 0 |
| McCook | 2 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 2 | -- | -- | -- | 0 | 2 |
| Minnehaha | 10 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 9 | -- | -- | -- | 0 | 10 |
| Moody | 2 | 0 | 0 | 0 | -- | 0 | 0 | 0 | 0 | 0 | 0 | 2 | -- | 0 | -- | 0 | 2 |
| Sanborn | 7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7 | -- | -- | -- | -- | 7 |
| Todd | 19 | -- | -- | 19 | -- | 19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tripp | 0 | 0 | -- | -- | -- | 0 | -- | -- | 0 | -- | 0 | -- | -- | 0 | -- | 0 | 0 |
| Turner | 2 | -- | 0 | 0 | -- | 0 | -- | 0 | 0 | 0 | 0 | 2 | -- | -- | -- | 0 | 2 |
| Union | 2 | -- | -- | 0 | -- | 0 | -- | -- | -- | -- | -- | 2 | -- | -- | -- | 0 | 2 |
| Total | 87 | 1 | 0 | 20 | -- | 21 | 0 | 0 | 1 | 0 | 1 | 62 | -- | 1 | 0 | 1 | 66 |
| **Western Unit** | | | | | | | | | | | | | | | | | |
| Custer | 952 | -- | 97 | 855 | -- | 952 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fall River | 50 | -- | 22 | 28 | -- | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Harding | 194 | -- | -- | 194 | -- | 194 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lawrence | 2,801 | -- | 36 | 2,764 | -- | 2,801 | -- | -- | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 |
| Meade | 873 | -- | -- | 873 | -- | 873 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pennington | 3,698 | 0 | 71 | 3,624 | 3 | 3,698 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total | 8,567 | 0 | 226 | 8,338 | 3 | 8,567 | -- | -- | -- | -- | -- | -- | 0 | 0 | -- | -- | 0 |
| **State total** | 8,654 | 1 | 226 | 8,357 | 3 | 8,588 | 0 | 0 | 1 | 0 | 1 | 62 | 0 | 1 | 0 | 1 | 67 |

0 = Less than 500 cubic feet.

[1] Includes eastern redcedar and Rocky Mountain juniper.

*Rows and columns may not sum due to rounding.*

Table 12.—Residues produced at primary wood-using mills by Forest Survey Unit, type of use, and residue type, South Dakota, 2004

(In thousand tons, green weight)

| Forest Survey Unit and type of use | Total | | Residue type | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Wood residue | | | | Bark | |
| | | | Coarse[1] | | Fine[2] | | | |
| | Softwood | Hardwood | Softwood | Hardwood | Softwood | Hardwood | Softwood | Hardwood |
| **All Units** | | | | | | | | |
| Fiber products | 250.90 | -- | 186.46 | -- | 62.76 | -- | 1.68 | -- |
| Industrial fuel used at mill | 45.26 | 0.05 | 0 | 0.04 | -- | -- | 45.26 | 0.01 |
| Industrial fuel sold | 2.36 | -- | 0.36 | -- | 0.84 | -- | 1.16 | -- |
| Domestic fuel | 1.19 | 0.30 | 0.88 | 0.29 | -- | -- | 0.31 | 0.01 |
| Miscellaneous[3] | 78.65 | 0.36 | 0.64 | 0.10 | 46.46 | 0.25 | 31.55 | 0.01 |
| Not used | 3.24 | 0.40 | 0.77 | 0.12 | 1.23 | 0.07 | 1.24 | 0.21 |
| Total | 381.63 | 1.11 | 189.12 | 0.55 | 111.30 | 0.32 | 81.21 | 0.24 |
| **Eastern Unit** | | | | | | | | |
| Industrial fuel used at mill | 0 | 0.05 | 0 | 0.04 | -- | -- | 0 | 0.01 |
| Domestic fuel | 0.01 | 0.30 | 0.01 | 0.29 | -- | -- | 0 | 0.01 |
| Miscellaneous[3] | 0.80 | 0.36 | 0.41 | 0.10 | 0.22 | 0.25 | 0.17 | 0.01 |
| Not used | 0.01 | 0.39 | 0 | 0.12 | 0.01 | 0.06 | 0 | 0.21 |
| Total | 0.82 | 1.09 | 0.42 | 0.54 | 0.23 | 0.32 | 0.17 | 0.23 |
| **Western Unit** | | | | | | | | |
| Fiber products | 250.90 | -- | 186.46 | -- | 62.76 | -- | 1.68 | -- |
| Industrial fuel used at mill | 45.26 | -- | -- | -- | -- | -- | 45.26 | -- |
| Industrial fuel sold | 2.36 | -- | 0.36 | -- | 0.84 | -- | 1.16 | -- |
| Domestic fuel | 1.18 | 0.01 | 0.87 | 0.01 | -- | -- | 0.31 | -- |
| Miscellaneous[3] | 77.87 | 0 | 0.24 | 0 | 46.24 | 0 | 31.39 | -- |
| Not used | 3.22 | 0.02 | 0.77 | -- | 1.22 | 0.01 | 1.23 | 0.01 |
| Total | 380.80 | 0.03 | 188.69 | 0.01 | 111.07 | 0.01 | 81.04 | 0.01 |

0 = Less than 5 tons.

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3] Livestock bedding, mulch, small dimension, and speciality products.

*Rows and columns may not sum due to rounding.*

Piva, Ronald J.; Josten, Gregory J.; Mayko, Richard D.

2006. **South Dakota timber industry—an assessment of timber product output and use, 2004.** Resour. Bull. NC-264. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 36 p.

Discusses recent South Dakota forest industry trends; production and receipts of industrial roundwood; production of saw logs in 2004; and compares 2004 production and receipts with the results of the 1999 timber product output study. Reports on logging residue generated from timber harvest operations. Also reports on wood and bark residue generated at primary wood-using mills and on disposition of mill residues.

KEY WORDS: Industrial roundwood, logging residue, mill residue, production, receipts, saw logs.

The Forest Inventory and Analysis web site is:
www.fia.fs.fed.us

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